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AF/3729  
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42592

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:

**ECKHARD KÖNIG**

Serial No.: 09/980,854

Art Unit: 3729

Filed: December 7, 2001

Examiner: T. D. Phan

For: **METHOD FOR PRODUCING A FLAT  
COMMUTATOR (Amended)**

Appeal No. \_\_\_\_\_

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Transmitted herewith in triplicate is Applicant's Brief on Appeal in the above-identified application.

The item(s) checked below are appropriate:

- ☒ [ X ] Appeal fee (37 CFR 1.17(f))  
    ☒ [ X ] Large Entity - \$310.00  
    ☐ [ ] Small Entity - \$155.00  
        ☐ [ ] verified statement attached  
        ☐ [ ] verified statement previously filed  
☒ [ X ] A check in the amount of \$330.00 is attached.  
☒ [ X ] The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 18-2220. A duplicate copy of this sheet is attached.  
    ☒ [ X ] Any additional excess claim fees under 38 CFR 1.16.  
    ☒ [ X ] Any additional patent application processing fees under 37 CFR 1.17.

Dated: May 12, 2004

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Art Unit: **3729**

Examiner: **T. D. Phan**

Appeal No. \_\_\_\_\_

**BRIEF ON APPEAL**

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### APPENDIX A - COPY OF CLAIMS ON APPEAL

42592



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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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Art Unit: **3729**

Examiner: **T. D. Phan**

Appeal No. \_\_\_\_\_

**APPELLANT'S BRIEF**  
**ON APPEAL UNDER 37 C.F.R. § 1.192**

COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

For the appeal to the Board of Patent Appeals and Interferences from the decision dated November 14, 2003 of the Primary Examiner finally rejecting claims 11-18 in connection with the above-identified application, Applicant-Appellant submits the following brief in accordance with 37 C.F.R. §1.192.

1. Real Party in Interest

The inventor, Eckhard König, assigned his entire right, title and interest in the patent application to Kirkwood Industries GmbH of Herrenberg, Germany.

2. Related Appeals and Interferences

There are no other related appeals or interferences known to Appellant, Appellant's legal representative, or assignee, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending Appeal.

3. Status of Claims

Claims 8-18 are pending, are rejected, and are on appeal

4. Status of Amendments

Although the January 30, 2004 Amendment under 37 C.F.R. § 1.116 filed subsequent to the November 14, 2003 Office Action was initially refused entry in the February 26, 2004 Advisory Action, Examiner T. D. Phan advised in a May 7, 2004 telephone conversation with the undersigned that he reconsidered that refusal and will now allow entry and consideration of that Amendment.

5. Summary of the Invention

The present invention is a process for producing a flat commutator 1 comprising forming a metal carrier body 51 with segment support parts 4 and a hub 6 of electrically insulating material coupled to the carrier body. An annular disk containing carbon is joined in an electrically conductive and strong mechanical manner to the carrier body on its side opposite the hub, with the annular disk being resistive to a reactive environment. After the annular disk is joined to the carrier body, the carrier body is divided to separate the segment support parts 4 and

to form exposed surfaces of the segment support parts by the separation. The annular disk is also divided into annular segments in one step with the carrier body 14. The carrier disk and the annular disk are cut in combination by abrasive cutting or sawing. Only the exposed surfaces 14 of the segment support parts (Fig. 5), which exposed surfaces are formed by the dividing of the carrier body, are selectively coated with an environment resistant coating by currentless deposition carried out from a solution or a suspension. The coating is tin, silver or chromium, and forms a layer having a thickness between 0.1 $\mu$ m and 10 $\mu$ m.

By forming the method in this manner, the method can be performed economically and will produce a superior product.

6. Issue Presented for Review

The issues presented for review is as follows:

- (a) Whether claims 11-16 are anticipated under 35 U.S.C. § 102 over U.S. Patent No. 5,157,299 to Gerlach (Gerlach patent).
- (b) Whether claims 17 and 18 are unpatentable under 35 U.S.C. § 103 over the Gerlach patent in view of U.S. Patent No. 6,080,497 to Carey (Carey patent).

7. Grouping of Claims

The rejected claims do not stand or fall together. In addition to the patentable features of independent claim 11, each of dependent claims 12-18 is patentably distinguished for the additional reasons presented in the following argument section of this brief.

8. Argument

A. The Rejections

Claims 11-16 stand rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,157,299 to Gerlach. The Gerlach patent is cited for allegedly disclosing a method of producing a flat commutator involving forming a metal carrier body with segment support parts, providing a hub with insulative material or plastic, joining an annular plate of a carbon disk that is metal coated for conductivity and strength to operate in a hostile or aggressive environment, dividing the carrier body and annular disk into annular segment parts and supporting parts, and coating exposed or selected areas of the segment to the harsh environment by a resistant material or plastic which is a currentless deposition. Additionally, the Gerlach patent is cited for allegedly disclosing the cutting of the combination of the annular plate and plastic hub into segments.

Claims 17 and 18 stand rejected under 35 U.S.C. § 103 as being unpatentable over the Gerlach patent in view of the Carey patent. The Carey patent is cited for applying a coating of a tin or alloy having a thickness greater than 0.0001 inches (2.5 micrometers) for corrosion protection. In support of the rejection, the Examiner contends it would be obvious to provide the Carey coating in the Gerlach method.

B. Claim 11 is Not Anticipated by Gerlach Patent

The Gerlach patent does not anticipate or render obvious the subject matter of claim 11 since it does not disclose or render obvious the forming of exposed surfaces on the segment support parts by the dividing of the carrier body, in combination with the coating of those exposed surfaces on the carrier body as recited in claim 11. Additionally, the Gerlach patent does not anticipate or render obvious a currentless deposition of the coating, and more



particularly, does not disclose or render obvious the current deposition of the coating from a solution or a suspension as defined in claim 11. The recitation of the currentless deposition being "carried out from one of a solution and a suspension" is not treated in the final Office Action.

To support an anticipation rejection, all elements of the claim must be found in a single reference. In re Royka et al., 180 USPQ 580, 582 (CCPA 1974). Rejections under 35 U.S.C. § 102 are proper only when the claimed subject matter is identically disclosed or described in the prior art. In re Marshall, 198 USPQ 344, 346 (CCPA 1978). Since all elements of claim 11 are not identically disclosed or described in the Gerlach patent, the rejection under 35 U.S.C. § 102 is untenable.

The Gerlach patent does not disclose "formation of exposed surfaces of the segment support parts" when the carrier body is divided to separate the segment support parts. As clearly stated in column 2, lines 4 to 9:

"According to the present invention the side surfaces of directly adjacent carbon segment-supporting parts face one another and are covered completely by the moldable plastic compound constituent of the hub body. Thus, no excavation of the material of the segment-supporting parts can occur in this area..."

See also column 5, lines 36 to 46, of the Gerlach patent.

Further, in column 2, lines 9-15, the Gerlach patent states that

"...care need be taken only that the other areas of the second-supporting parts which are covered neither by the carbon segments nor by the hub bodies are protected from contact with the aggressive environment. Such protection can be attained for instance by coating the surfaces with a resistant metal or a plastic."

However, a substantial difference exists between coated surfaces of the Gerlach patent and the claimed exposed surfaces of the segment support part formed by separation of the segment

support part. The articles produced according to the Gerlach patent provide a coating of the "other areas" by the plastic material of the hub body as described in the Gerlach patent and as illustrated in Fig. 2 of the Gerlach patent, as well as in the first two photographs (photo 1 and photo 2) of attached Annex A of a corresponding article produced according to the Gerlach patent. Photo 1 of annex A represents a cross section of the structure shown in Fig. 1 of the Gerlach patent. In photo 1, the cut dividing the annular disk 1 of carbon provides an air gap 6. The air gap 6 does not divide the carrier body to separate the segment support parts 2 of copper, since the segment support parts 2 are already divided. Furthermore, the cut forming the air gap 6 extends in the hub body 4 portion only, such that no exposed surfaces of the segment support parts 2 are formed according to the Gerlach patent. Similarly in photo 2 the radially oriented cuts form the air gaps 6 extending only in the hub body 4, but do not form any exposed surfaces of the segment support parts 2 of copper.

Attached annex B shows two photographs (photo 3 and photo 4) of an article made according to the present claimed process and corresponding to Fig. 5 (photo 3) and Fig. 4 (photo 4) of the present application. As can be seen particularly from photo 3, the cut for dividing the annular disc 2 of carbon also divides the carrier body of copper to separate the segment support parts 4 and to form exposed surfaces 14 of the segment support parts 4 which has to be subsequently coated.

Relative to the Gerlach patent embodiment of Figure 3, as described in column 5, lines 59-62, an air gap 6 penetrates into moldable plastic filling the intermediate clearance between the side surfaces 2' of the segment supporting parts 2. In this manner, the plastic of the hub covers

these surfaces, not a coating. Additionally, the surfaces are not provided by dividing the carrier body to separate the segment support parts.

Similarly, as illustrated in Gerlach patent Figure 3 and described in column 8, lines 16-23, the moldable plastic compound is between the side surfaces 202' of the carbon segment-supporting parts 202. Thus, the hub material covers the sides of the segment support parts, not a coating.

Further, the lack of any description of a currentless deposition or of a currentless deposition from a solution or a suspension in the Gerlach patent prevents the Gerlach patent from anticipating or rendering obvious the subject matter of claim 11. Relative to this feature, column 2, lines 10-15, of the Gerlach patent is cited. This portion of the patent merely discloses coating the surface of the "other areas" with a resistant metal or a plastic. Such Gerlach patent disclosure is not of a currentless deposition carried out from a solution or suspension, as recited in claim 11.

In the Gerlach patent, any metal which is cut, if any, and then coated with a protection layer would be coated in a traditional manner for such metals involving a current disposition. Such current disposition according to the conventional way of depositing metal is commonly referred to as electroplating, as described for example in U.S. Patent No. 6,080,497 to Carey (see particularly column 22, line 19). Electroplating is a process of coating metal by means of an electric current. Thus, any suggestion of a coating of the cut surfaces would be by a current disposition and not a currentless disposition as recited in the present claimed invention.

The present claimed invention goes against conventional methods by using a currentless disposition, as opposed to a current disposition, for these particular surfaces of the segment support parts exposed by separation of the segment support parts. Coating these surfaces by electroplating

was found to produce poor results. Surprisingly, using a currentless disposition resulted in good coverage and good protection of the surfaces exposed by separation of the support parts. Such currentless disposition has no external current or voltage source, with the part surfaces being coated only by being placed in a solution or suspension comprising the substance forming the coating material. Since currentless disposition is more expensive than electroplating, the Gerlach patent in fact teaches away from the use of such currentless disposition.

No evidence of record or argument is presented demonstrating that the Gerlach "coating" is a currentless deposition from a solution or suspension.

C. Dependent Claims are Further Distinguished

Claims 12-18, being dependent upon claim 11, are also allowable for the above reasons. Moreover, these dependent claims recite additional features further distinguishing them over the cited patents. Specifically, the carbon disk of claim 12, the division of the carrier body after joining with the annular disk of claim 13, the one step division of the carrier body and the annular disk of claim 14, the combination cut by abrasive cutting or sawing of claim 15, the selective coating of only the exposed surfaces of the segment support parts of claim 16, the coating of tin, silver or chromium of claim 17, and the coating thickness of claim 18, are not anticipated or rendered obvious by the cited patents, particularly within the overall claim combination.

Relative to claims 17 and 18, U.S. Patent No. 6,080,497 to Carey is cited. The Carey patent is cited for applying a coating of tin alloy having a thickness greater than 0.0001 inch (2.5

micrometers) for corrosion protection. In support of this rejection, it is alleged that it would be obvious to provide the Carey coating in the Gerlach method. However, the Carey patent does not cure the deficiencies relative to the lack of currentless deposition from a solution or suspension to provide a coating on surfaces exposed by the division of the carrier body as required in claim 11.

When no reference discloses a feature of a claim relied on to distinguish the prior art, there can be no suggestion to modify the prior art to contain that feature. In re Civitello, 339 F.2d 243, 144, USPQ 10 (C.C.P.A. 1964). As stated in W. L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1551, 220 USPQ 303, 311 (Fed. Cir. 1983), there must be something in the teachings of the cited patents to suggest to one skilled in the art that the claimed invention would be obvious. Here, there is no teaching in the Gerlach patent, or in any other cited patent, of the claimed coating on the surfaces exposed by dividing the carrier body and the claimed currentless deposition from a solution or suspension. Thus, the rejection is not adequately supported by a clear factual basis, as required. In re Warner, 379 F.2d 1011, 154 USPQ 173 (C.C.P.A. 1967).

Accordingly, claims 12-18 are also patentably distinguishable over the cited patents.

9. Conclusion

In view of the foregoing, Applicant-Appellant submits that the rejections under 35 U.S.C. § 102 and § 103 of claims 11-18 are untenable. Thus, Applicant-Appellant requests that these rejections be reversed.

Respectfully Submitted,



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Dated: May 12, 2004

APPENDIX A - COPY OF CLAIMS ON APPEAL

11. A process for producing a flat commutator, comprising the steps of:

forming a metal carrier body with segment support parts;

forming a hub of electrically insulating material coupled to the carrier body;

joining an annular disk in an electrically conductive and strong mechanical manner to the carrier body on a side thereof opposite to the hub, the annular disk being resistive to a reactive environment;

dividing the carrier body to separate the segment support parts and to form exposed surfaces of the segment support parts by separation thereof;

dividing the annular disk into annular segments; and

coating the exposed surfaces of the segment support parts formed by the dividing of the carrier body with an environment resistant coating by currentless deposition carried out from one of a solution and a suspension.

12. A process according to claim 11 wherein

said annular disk contains carbon.

13. A process according to claim 11 wherein

the carrier body is divided into segment support parts after joining the annular disk thereto.

14. A process according to claim 13 wherein the carrier body and the annular disk are divided in one step.
15. A process according to claim 14 wherein the carrier disk and the annular disk are cut in combination by one of abrasive cutting and sawing.
16. A process according to claim 11 wherein only the exposed surfaces of the segment support parts are selectively coated.
17. A process according to claim 11 wherein the coating is tin, silver or chromium.
18. A process according to claim 11 wherein the coating forms a layer having a thickness between 0.1 and 10 $\mu$ m.



Annex A

US 5,157,299 (GIERLACH)

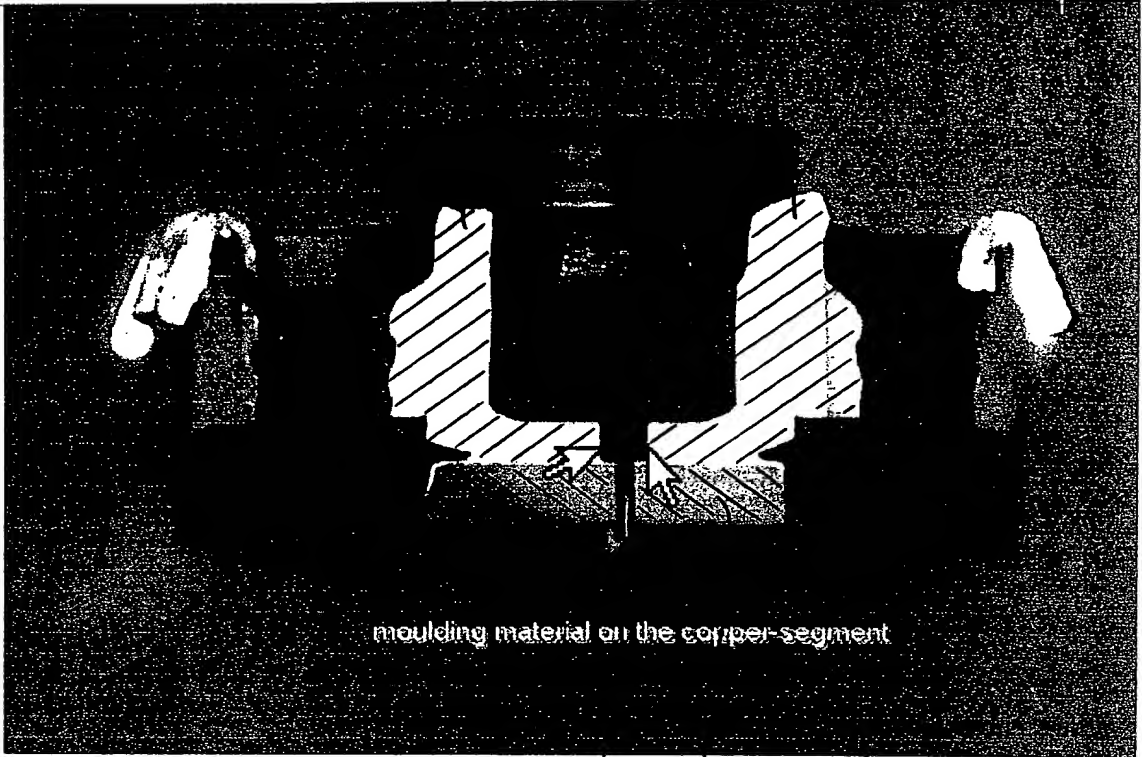
2

4

hub body

2

copper



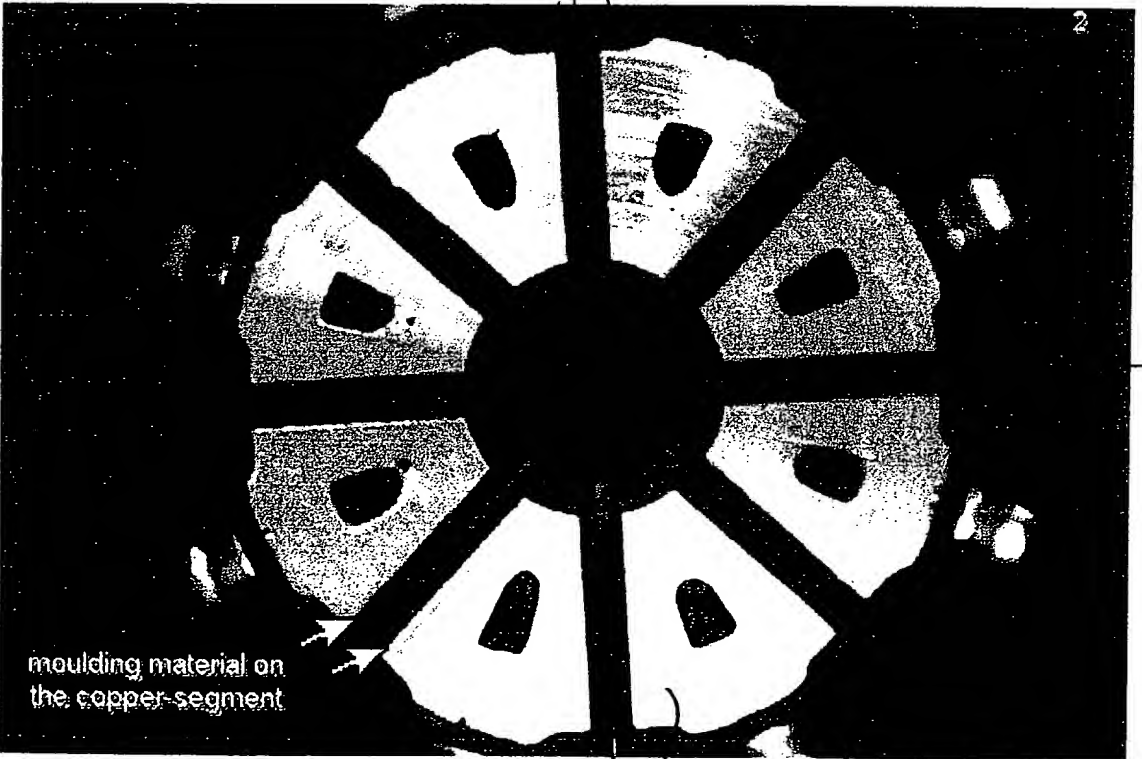
6  
air  
gap

1

carbon

6

photo 1



6 air  
gap

6  
air

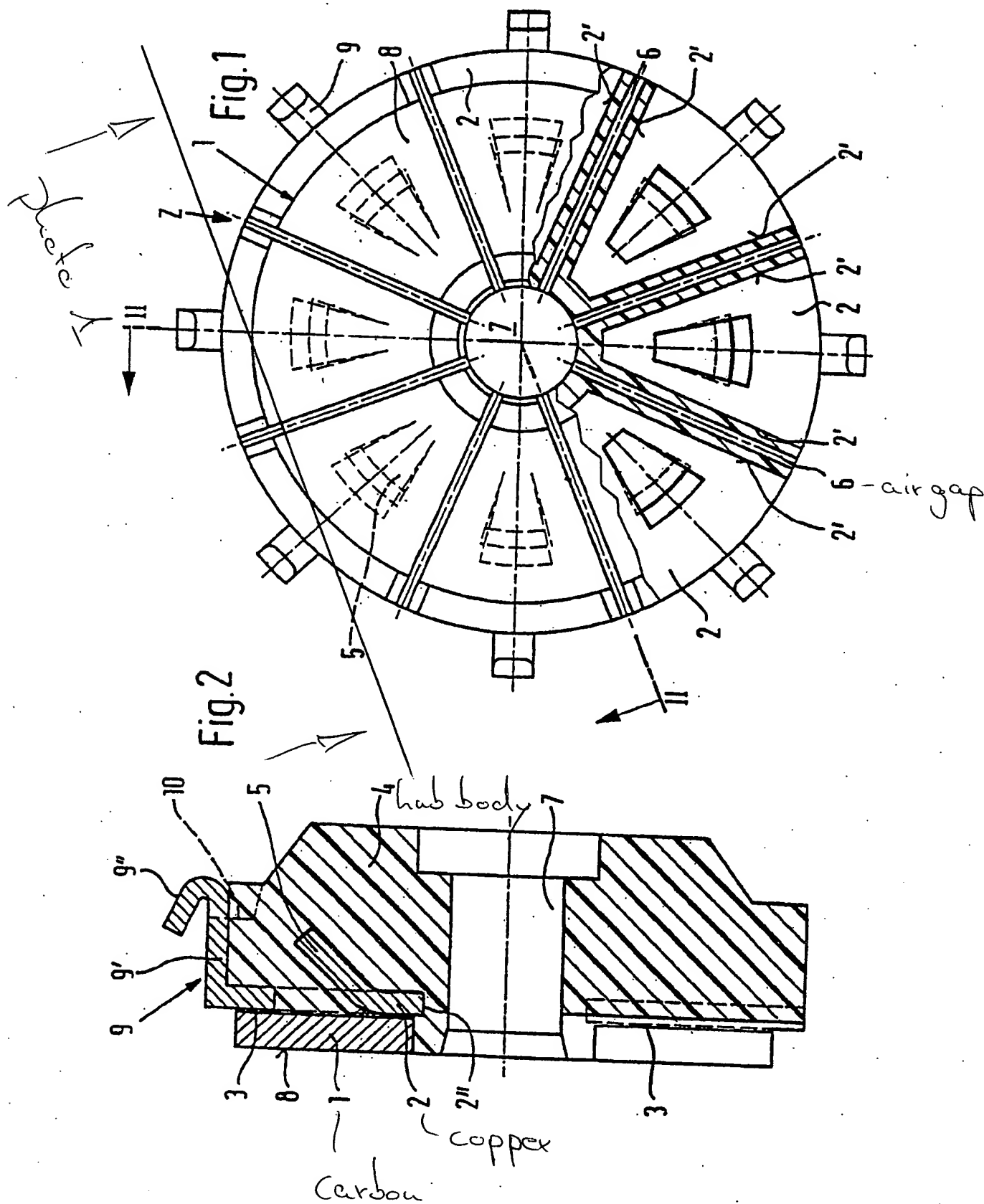
2

copper

4

hub body

photo 2

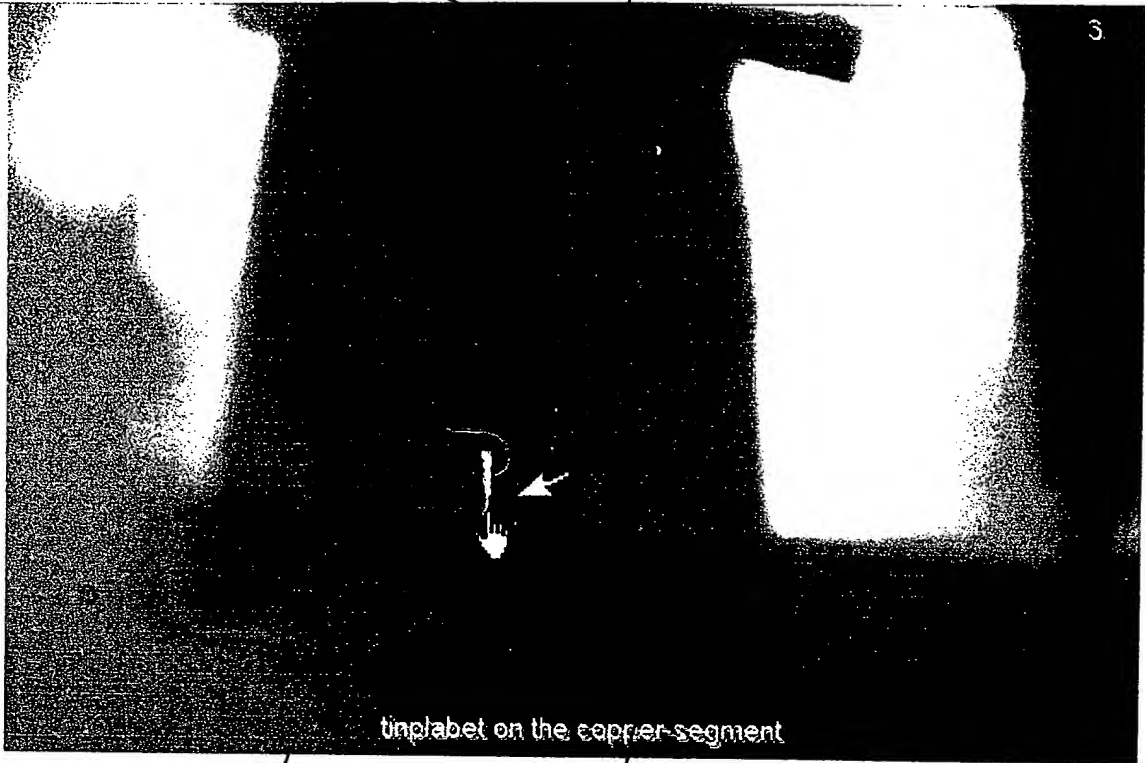


Annex B A D

AS 09/980, 854  
(PCI/EP00/05333)

6 hub

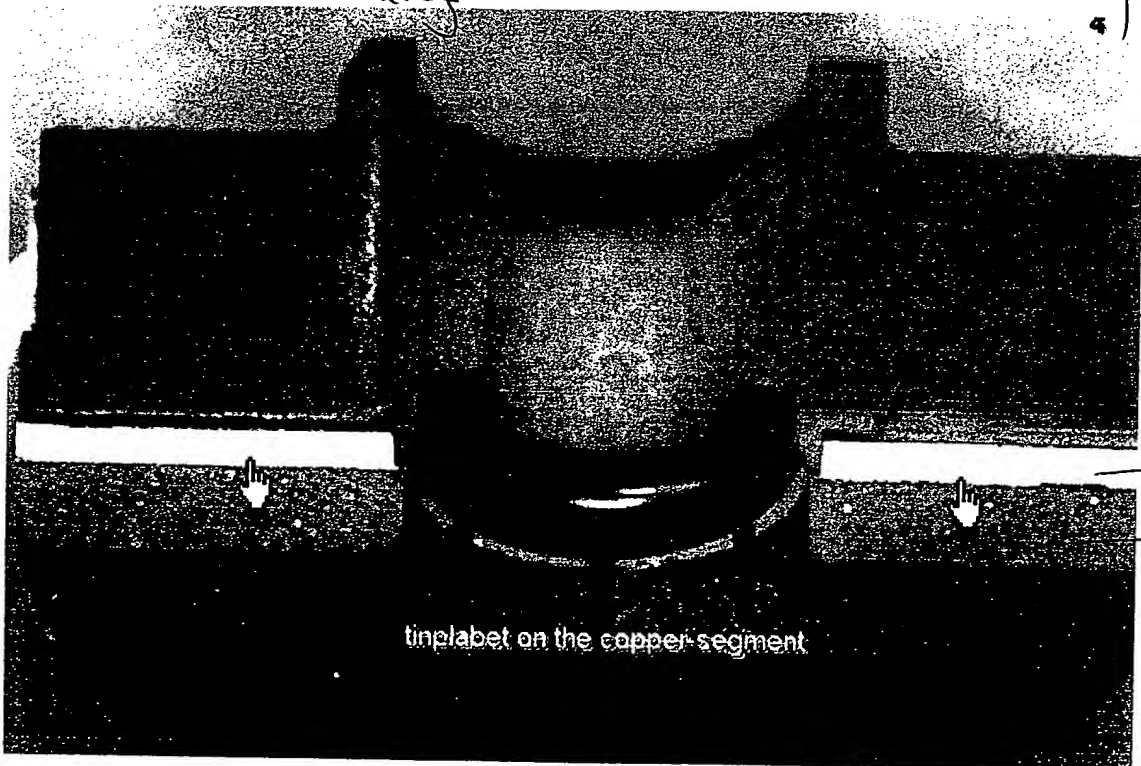
4 copper



14 surface  
coating

2 carbon

photo 3  
= fig. 5



6 hu

14

2

carbo.

photo 4  
= fig. 1.

3 / 3

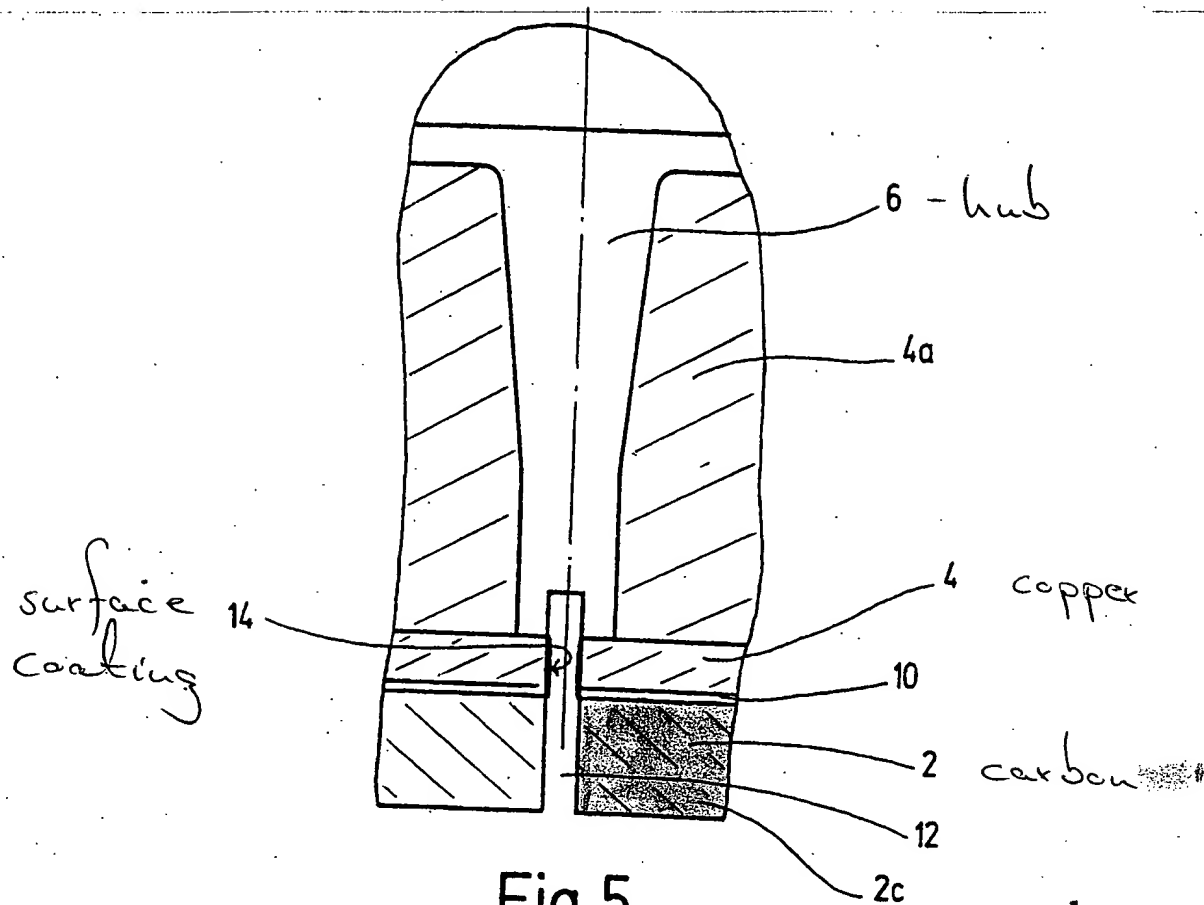


Fig. 5

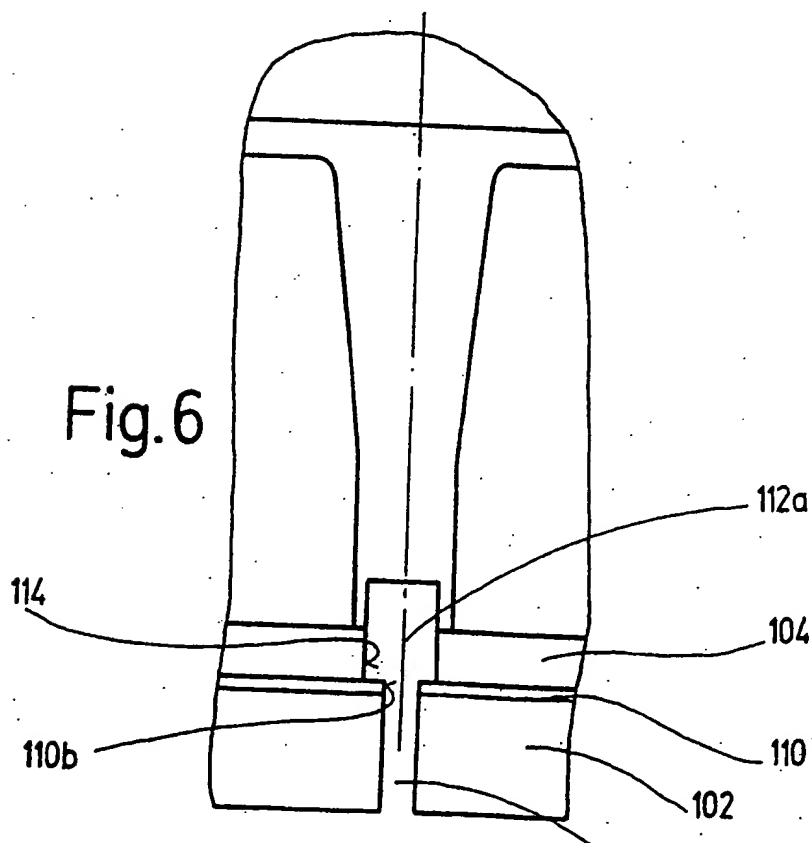


Fig. 6